SCIENTIFIC NOTATION

Scientific notation is the way that scientists easily handle very large or very small numbers. For example, instead of writing 0.000000005, we write 5×10^{-9}. Think of 5×10^{-9} as the product of two numbers: 5 (the digit term) and 10^{-9} (the exponential term).

Here are some examples of scientific notation.

$10000 = 1\times10^{4}$	$24327 = 2.4327\times10^{4}$
$1000 = 1\times10^{3}$	$7354 = 7.354\times10^{3}$
$100 = 1\times10^{2}$	$482 = 4.82\times10^{2}$
$10 = 1\times10^{1}$	$89 = 8.9\times10^{1}$ (not usually done)
$1 = 10^{0}$	
$1/10 = 0.1 = 1\times10^{-1}$	$0.32 = 3.2\times10^{-1}$ (not usually done)
$1/100 = 0.01 = 1\times10^{-2}$	$0.053 = 5.3\times10^{-2}$
$1/1000 = 0.001 = 1\times10^{-3}$	$0.0078 = 7.8\times10^{-3}$
$1/10000 = 0.0001 = 1\times10^{-4}$	$0.00044 = 4.4\times10^{-4}$

As you can see, the exponent of 10 is the number of places the decimal point must be shifted to give the number in long form. A **positive** exponent shows that the decimal point is shifted that number of places to the right. A **negative** exponent shows that the decimal point is shifted that number of places to the left.

When entering scientific notation into your calculator **make sure that the number in scientific notation is put into your calculator correctly**.

Read the directions for your particular calculator. For inexpensive scientific calculators:

1. Punch the number (the digit number) into your calculator.
2. Push the EE or EXP button. Do **NOT** use the × (times) button!!
3. Enter the exponent number. Use the +/- button to change its sign.
4. Treat any number in scientific notation as a normal number in all subsequent calculations.

To check yourself, multiply 6.0×10^{5} times 4.0×10^{3} on your calculator. Your answer should be 2.4×10^{9}.